

CLAIMS

What is claimed is:

- 5           1.       A controller for a microturbine generator system, said controller comprising:
- a computer control unit;
- a utility power grid sensor input line to said computer control unit; and
- a utility power grid disconnect command output line from said computer control
- unit;
- 10                       wherein said computer control unit causes automatic transitions of the
- microturbine generator system between at least four states, said at least four states comprising a
- generator standby backup mode, a generator standalone mode, a transfer to standby backup mode, and
- a generator startup battery charging mode.
- 15           2.       The controller of claim 1 wherein said at least four states additionally comprises a
- transfer to standalone mode.
3.       The controller of claim 1 additionally comprising a utility circuit breaker status input line to
- said computer control unit.
- 20           4.       The controller of claim 1 wherein said computer control unit in causing a transition to
- generator standalone mode causes a generator to start, disconnects the load from a utility power grid
- and then connects a load to an output from the generator.

5. The controller of claim 1 wherein said computer control unit in causing a transition to transfer to standby backup mode causes a generator to enter a power-down sequence, disconnects a load from an output from the generator, and connects the load to a utility power grid.

5 6. The controller of claim 1 wherein said computer control unit in causing a transition to generator startup battery charging mode causes a generator to run, maintains disconnection of a load from an output from the generator, and maintains connection of the load to a utility power grid.

10 7. The controller of claim 6 wherein said computer control unit causes a transition to generator startup battery charging mode at periodic intervals.

15 8. The controller of claim 1 additionally comprising a contactor to connect and disconnect a load from a utility power grid and controlled by said utility power grid disconnect command output line.

20 9. The controller of claim 8 wherein said contactor comprises an auxiliary contact for providing status of said contactor to said computer control unit via a utility grid disconnect relay status line.

10. The controller of claim 8 additionally comprising a utility grid disconnect relay controlling said contactor.

11. A method for controlling a microturbine generator system, the method comprising the steps of:

providing a computer control unit;

providing a utility power grid sensor input line to the computer control unit; and

providing a utility power grid disconnect command output line from the computer control unit; and

causing, via the computer control unit, automatic transitions of the microturbine generator system between at least four states, the at least four states comprising a generator standby backup mode, a generator standalone mode, a transfer to standby backup mode, and a generator startup battery charging mode.

12. The method of claim 11 wherein in the causing step the at least four states additionally comprises a transfer to standalone mode.

13. The method of claim 11 additionally comprising the step of providing a utility circuit breaker status input line to the computer control unit.

14. The method of claim 11 wherein in the causing step the computer control unit in causing a transition to generator standalone mode causes a generator to start, disconnects the load from a utility power grid and then connects a load to an output from the generator.

15. The method of claim 11 wherein in the causing step the computer control unit in causing a transition to transfer to standby backup mode causes a generator to enter a power-down sequence, disconnects a load from an output from the generator, and connects the load to a utility power grid.

16. The method of claim 11 wherein in the causing step the computer control unit in causing a transition to generator startup battery charging mode causes a generator to run, maintains disconnection of a load from an output from the generator, and maintains connection of the load to a utility power grid.

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17. The method of claim 16 wherein in the causing step the computer control unit causes a transition to generator startup battery charging mode at periodic intervals.

18. The method of claim 11 additionally comprising the step of providing a contactor to connect and disconnect a load from a utility power grid and controlled by the utility power grid disconnect command output line.

19. The method of claim 18 wherein, in the step of providing a contactor, the contactor comprises an auxiliary contact for providing status of the contactor to the computer control unit via a utility grid disconnect relay status line.

20. The method of claim 18 additionally comprising the step of providing a utility grid disconnect relay controlling the contactor.